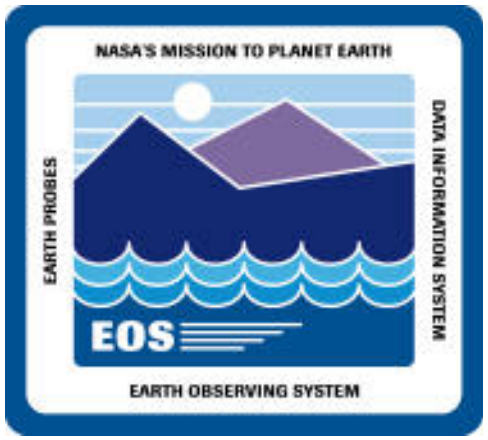

Risk Management

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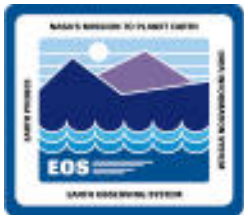
25 April 1996

Program Risks Downgrades Since IDR



P-12 DAAC Unique Extensions

» Reached policy agreement with ESDIS

» Interface Definition Document (IDD) published, final version to reflect DAAC feedback.

T-2 Earth Science Query Language

» SQL3 precursor selected, report issued.

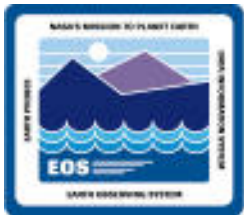
T-4 COTS Hierarchial Storage Management System

» EMASS-based design supports robust, heterogeneous implementation.

T-8 Archive Scalability and Maintainability

» EMASS-based design supports robust, heterogeneous implementation.

Program Risks Downgrades Since IDR (cont.)



A-8 External Interface Security

» ESDIS policy guidance issued

» Policy is implemented in ECS design.

A-9 DAAC-Level Planning and Scheduling

» ECS design provides access to necessary planning and scheduling information

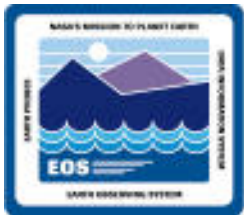
» Policy issues addressed at operations workshop (1/96).

U-9 DAS Integration

» On-going DAO/ECS studies

» Engineering White Paper.

Top Program Risks



P-3 **Compressed Development Schedule**

P-5 **Release to Release Transition**

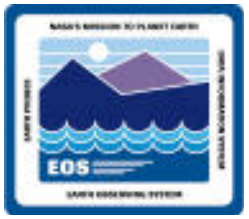
P-11 **Undefined External Interface**

P-13 **Response Time for System Mod and Upgrades**

P-15 **Systems Operability**

T-5 **Cost Effective Storage Technology**

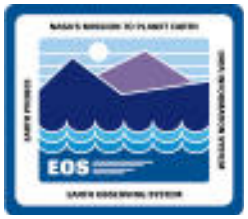
P-3, Compressed Development Schedule



- **Risk Description:**
  - The short time interval between the deployment of releases A and B forces the ECS project to undertake nearly parallel development efforts with high peak manpower requirements, and reduced opportunities for transferring lessons learned from one release to the next.

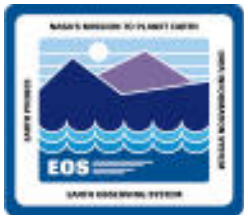
- **Background:**
  - If peak manpower requirements are not met, schedule will be at risk. If lessons learned are not transferred from one release to the next, schedule, cost and user satisfaction will be at risk.

P-3, Compressed Development Schedule (cont.)



- **Risk Mitigation:**
  - Intense recruitment and training activities have achieved ambitious objectives.
  - Critical developments have been placed on the 'Incremental Track' as Evaluation Packages or 'Prototypes' to enable early development, testing and user evaluation. Feedback is already being factored in Release A and B development activities .
  - The ECS project has instituted Design Issues Teams (DITs) to design common solutions to common problems.
  - Release B has adopted a development phasing sequence in which phase 1 products emphasize new-to-B features.
  - M&O.1 mitigates risk thru early COTS updates.
  - Selective early B development starts.

P-5, Release to Release Transition



– **Risk Description:**

» The DAAC re-configuration from Release A to Release B, may cause a temporary interruption in the ingest and production of TRMM data products. Loss of TRMM data must be avoided, disruption to users must be minimized.

– **Background:**

» Installation and testing for Release B will take place while Release A is supporting operations.

» The Release B infrastructure is significantly different from that of Release A.

- Network upgrades for higher bandwidth;
- Operating system versions;
- DCE version and multi-cell topology;
- COTS upgrades.

» The system cannot be partitioned into two complete substrings.

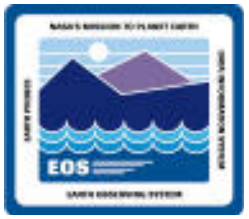
– **Risk Mitigation:**

» Preliminary Transition Plan (420-TP-010-001), version 2 of 4, distributed for review;

» M&O.1 release will introduce infrastructure upgrades before Release A transition to Operations

» Mode Management (in M&O.1) enables parallel test and operations.

P-11, Undefined External Interfaces

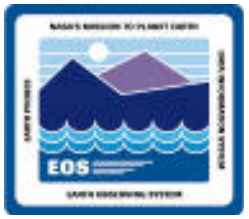


- **Risk Description:**
  - 1) Interface requirements undefined for future missions i.e., Radar Alt, ACRIM, SeaWinds.
  - 2) Required interfaces are not fully defined in some external ICDs i.e., Landsat-7 and ASTER.

- **Background:**
  - 1) Radar Alt., ACRIM and SeaWinds are scheduled post AM -1 timeframe. Some PIs are not ready to discuss ECS external interface requirements.
  - 2) Unresolved interface issues are documented in the appendices of individual external ICDs.

- **Risk Mitigation:**
  - Interface Control Working Group (ICWG) will monitor issue resolution in accord with work-off plans identified in the appendices of the ICDs.
  - Assumptions for a no impact design are defined in the Release B ICD Status and Closure Plan (4/25/96).
  - Assist ESDIS in developing solutions.

P-13, Response Time for System Mods and Upgrades



– **Risk Description:**

» Adequacy of the technical baseline used to size hardware buys is uncertain due to unknowns in the demands of science algorithms.

– **Background:**

» Span between the time of Release B hardware procurement and delivery of science algorithm is uncomfortably long.

– **Risk Mitigation:**

» Introduce two-stage buy to defer some equipment selections and sizings.

» First phase, buy only capacity required for initial system testing.

P-15, System Operability (IDR Risk P-7)

– **Risk Description:**

» Lack of a documented system usage operations concept inhibits the customer and user community from performing an operational assessment of the design.

– **Background:**

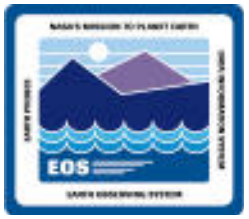
» At the time of Release B IDR, the understanding of the system operability lacked maturity.

– **Risk Mitigation:**

» The following have led to establishing a more mature operations concept:

- Operations Workshops and Telcons;
- Coordination and resubmission of DID 604 and 605;
- Definition of operations roles and responsibilities in DID 607;
- Plans for conducting GUI workshops for Release B as in Release A;
- Successful Operability assessment of design by M&O.

T-5, Cost Effective Storage Technology



– **Risk Description:**

» The evolution of storage technology may not be fast enough to provide cost effective approaches to storing the vast datasets needed by the MTPE program over the next two decades.

– **Background:**

» Several new storage technologies (helical scan on magnetic media, and optical media) were considered for use in the ECS program; however, their development has not matured as fast as desired.

» Release B requirements can be satisfied through the end of the decade with existing magnetic media and linear scan techniques.

» Continued reliance on this technology over the following decade may be prohibitively expensive due to increased storage requirements.

– **Risk Mitigation:**

» Interact with vendors to assure their awareness of MTPE needs.

» Monitor progress in technology maturation, use prototypes to benchmark status and measure progress.